

**METHOD AND SYSTEM FOR AUTOMATED  
SELECTION OF OPTIMAL COMMUNICATION  
NETWORK EQUIPMENT MODEL, POSITION, AND  
CONFIGURATION IN 3-D**

**ABSTRACT OF THE DISCLOSURE**

A method for engineering management and planning for the design of a communications network in three-dimensions (3-D) combines computerized organization, database fusion, and site-specific communication system performance prediction models. The method enables a designer to keep track of communication system performance throughout the process of pre-bid design, installation and maintenance of a communication system. Using a database of information that defines the desired environment, predictions of communication system performance criteria, such as received signal strength intensity (RSSI), throughput, bandwidth, quality of service, bit error rate, packet error rate, frame error rate, dropped packet rate, packet latency, round trip time, propagation delay, transmission delay, processing delay, queuing delay, capacity, packet jitter, bandwidth delay product, handoff delay time, signal-to-interference ratio (SIR), signal-to-noise ratio (SNR), physical equipment price, installation cost, or any other communication system performance metric, can be made. Automated selection, placement, and configuration of communication component equipment can be performed using desired performance criteria identified at finite locations within the environment along with a finite set of communication component models and suitable locations and configurations in the environment.

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